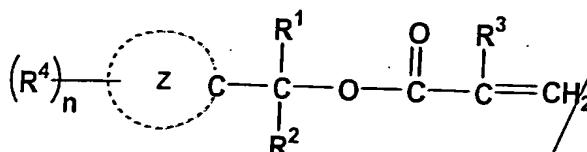
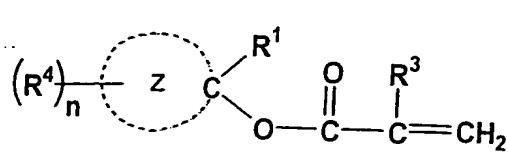


## CLAIMS

1. An acid-responsive compound represented by the following formula (1) or (2)



(1)



(2)

wherein  $R^1$  and  $R^2$  are the same or different from each other and each represents a hydrogen atom, an alkyl group or a cycloalkyl group;  $R^3$  represents a hydrogen atom or a methyl group;  $R^4$  represents a hydrogen atom, a halogen atom, an alkyl group, an oxygen-containing group, an amino group or an N-substituted amino group;  $n$  represents an integer of not less than 1; with proviso that all  $R^4$ 's are not concurrently hydrogen atoms, and  $R^4$  may be vary according to  $n$ ; the  $Z$  ring represents a monocyclic or polycyclic alicyclic hydrocarbon ring; in formula (1),  $R^1$  and  $R^2$  may, jointly and together with the adjacent carbon atom, form an alicyclic hydrocarbon ring.

2. The acid-responsive compound according to Claim 1 wherein, in the formula (1),  $R^1$  is a hydrogen atom and  $R^2$  is a hydrogen atom or a straight-chain or branched-chain  $C_{1-4}$  alkyl group.

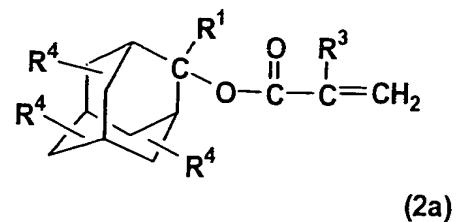
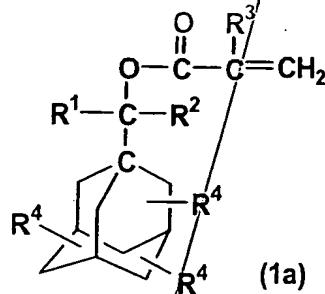
25                   3. The acid-responsive compound according to Claim 1  
wherein the Z ring is a bridged ring-type hydrocarbon ring  
4                   comprising 2 to 4 rings.

4. The acid-responsive compound according to Claim 1 wherein the oxygen-containing group is at least one substituent selected from the group consisting of oxo group, hydroxyl group, an alkoxy group, carboxyl group, an alkoxy carbonyl group, a 5 cycloalkyloxycarbonyl group, an aryloxycarbonyl group, an aralkyloxycarbonyl group, hydroxymethyl group, carbamoyl group, an N-substituted carbamoyl group and nitro group.

5. The acid-responsive compound according to Claim 1 wherein R<sup>4</sup> is a hydroxyl group, an alkoxy group, a carboxyl group, 10 an alkoxy carbonyl group or a hydroxymethyl group.

6. The acid-responsive compound according to Claim 1 wherein R<sup>4</sup> is a hydroxyl group or a carboxyl group and n is an integer of 2 to 4.

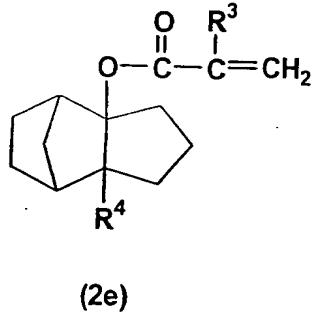
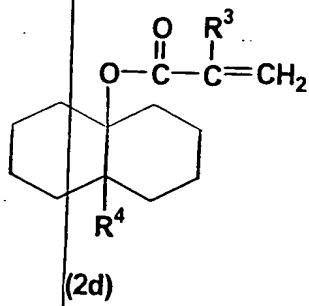
7. The acid-responsive compound according to Claim 1, 15 which is represented by the following formula (1a) or (2a):



wherein R<sup>1</sup>, R<sup>2</sup> and R<sup>3</sup> are as defined above; R<sup>4</sup>'s may be the same or different from each other and each represents a hydrogen atom, a halogen atom, an alkyl group, an oxygen-containing group, an amino group or an N-substituted amino group; with proviso that all R<sup>4</sup>'s are not concurrently hydrogen atoms.

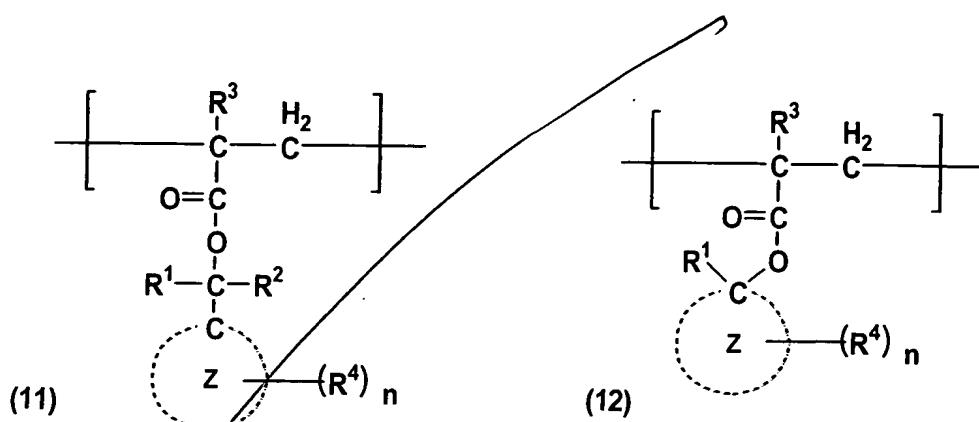
8. The acid-responsive compound according to Claim 7  
 wherein R<sup>1</sup> is a hydrogen atom or a straight-chain or  
 branched-chain C<sub>1-4</sub> alkyl group; R<sup>2</sup> is a hydrogen atom or a  
 straight-chain or branched-chain C<sub>1-4</sub> alkyl group; R<sup>3</sup> is a  
 5 hydrogen atom or a methyl group; at least one of R<sup>4</sup>'s is at least  
 one oxygen-containing group selected from the group consisting  
 of oxo group, hydroxyl group, an alkoxy group, carboxyl group,  
 an alkoxy carbonyl group, a cycloalkyloxycarbonyl group, an  
 aryloxycarbonyl group, an aralkyloxycarbonyl group,  
 hydroxymethyl group, carbamoyl group, an N-substituted  
 10 carbamoyl group and nitro group.

9. The acid-responsive compound according to Claim 1  
 which is represented by the following formula (2d) or (2e);



20 wherein R<sup>3</sup> and R<sup>4</sup> are as defined above.

10. A photoresist resin composition comprising a  
 polymer having at least a unit represented by the following  
 formula (11) or (12);



wherein  $R^1, R^2, R^3, R^4, Z$  ring and  $n$  are as defined in

**Claim 1**

10 and a photoactive acid precursor.

11. The photoresist resin composition according to  
Claim 10 wherein the Z ring is an adamantane ring.

12. The photoresist resin composition according to  
Claim 10 which contains 0.1 to 30 parts by weight of the  
photoactive acid precursor relative to 100 parts by weight of  
the polymer.

13. The photoresist resin composition according to  
10  
Claim 8 wherein the polymer is a copolymer.

14. A method of forming a pattern which comprises  
20 subjecting a layer comprising the photoresist resin composition  
of Claim 8 formed on a substrate to pattern exposure and  
10 developing the exposed coating layer to form a pattern.

add 56